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Hendrickson et al.

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(54) **SYSTEM AND METHOD FOR MEASURING WIRELESS DEVICE AND NETWORK USAGE AND PERFORMANCE METRICS**

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(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 187 days.

This patent is subject to a terminal disclaimer.

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(51) **Int. Cl.⁷** H04B 17/00

(52) **U.S. Cl.** 455/67.11; 455/405; 455/456.1

(58) **Field of Search** 455/423, 424, 455/425, 67.11, 67.13, 67.7, 456.1, 63.1, 405, 456.3, 456.6, 406; 702/1, 127; 709/224, 223; 705/63

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,675,510 A	10/1997	Coffey et al.	
5,987,306 A	* 11/1999	Nilsen et al.	455/67.11
6,115,680 A	9/2000	Coffee et al.	
6,138,147 A	10/2000	Weaver et al.	
6,397,256 B1	* 5/2002	Chan et al.	709/229
6,405,251 B1	* 6/2002	Bullard et al.	709/224
6,470,386 B1	* 10/2002	Combar et al.	709/224
2002/0025795 A1	* 2/2002	Sharon et al.	455/405

* cited by examiner

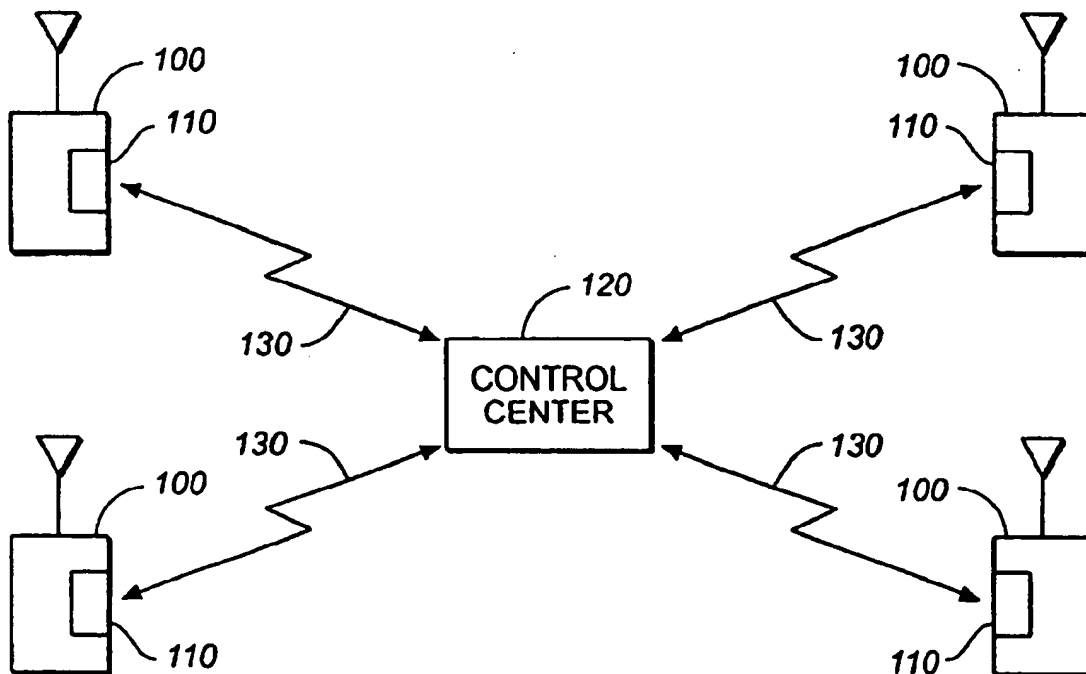
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(57) **ABSTRACT**

Systems and methods for measuring wireless device and wireless network usage and performance metrics are set forth. The system includes at least one wireless device, and data gathering software installed on the wireless device for collecting device parametric data, network parametric data, event data. A control center may receive, store and process said device parametric data, network parametric data, and event data.

31 Claims, 19 Drawing Sheets



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TITLE: System and method for measuring
wireless device and network usage and performance metrics

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Detailed Description Text - DETX (136):

In step 1328, device physical location is determined as described below.
The device physical location also constitutes gathered data. One or more than one approach to determining the geographic location of a mobile device when data is gathered by a data gathering module. For instance, the data gathering module may issue a call to the device operating system requesting the base station identification for the base station with which the device currently has a connection. Alternatively, the data gathering module may issue a call to the device operating system requesting identification of the cell site location or the cell tower with which the device currently is in communication. The cell site information may be appropriate for CDMA connections during soft handoffs, for example. As yet another alternative, the data gathering module may issue a call to the device operating system requesting the base station zip code information for the base station with which the device currently has a connection. As still another alternative, the data gathering module may make a request for a global positioning system (GPS) fix on the device's geographic location at the time of the data gathering. It will be appreciated that a